

CA20N
EV
1978
R22

REVIEW
of the
ENVIRONMENTAL ASSESSMENT
REGIONAL MUNICIPALITY OF NIAGARA
WELLAND WATER TREATMENT PLANT
EXPANSION.
WELLAND, ONTARIO

July 1978



Province
of
Ontario

ONTARIO LEGISLATIVE LIBRARY
TORONTO

JUN 20 1983

RECEIVED

Copyright Provisions and Restrictions on Copying:

This Ontario Ministry of the Environment work is protected by Crown copyright (unless otherwise indicated), which is held by the Queen's Printer for Ontario. It may be reproduced for non-commercial purposes if credit is given and Crown copyright is acknowledged.

It may not be reproduced, in all or in part, for any commercial purpose except under a licence from the Queen's Printer for Ontario.

For information on reproducing Government of Ontario works, please contact ServiceOntario Publications at copyright@ontario.ca

CA20N
EV
1978
R22

REVIEW
of the
ENVIRONMENTAL ASSESSMENT
submitted by
THE MINISTRY OF THE ENVIRONMENT
for a
PROPOSED EXPANSION TO THE REGIONAL MUNICIPALITY OF
NIAGARA-WELLAND WATER TREATMENT PLANT, WELLAND, ONTARIO
EA FILE NO. 1-78-0004-000

Review prepared pursuant to Section 7(1) of
The Environmental Assessment Act, 1975

JULY 1978
PROVINCE OF ONTARIO

RECOMMENDATION

Pursuant to Section 5(1) of The Environmental Assessment Act, it is recommended that:

- a) The environmental assessment be accepted; and
- b) The undertaking be given approval to proceed subject to the conditions on pages 27-29 of this review.

Note: For further information or questions regarding the review, please contact the review co-ordinator, Mr. Robert C. Hodgins, Ministry of the Environment, Environmental Assessment Section (416) 965-3198.

TABLE OF CONTENTS

	<u>Page No.</u>
OUTLINE OF REVIEW	1
I. INTRODUCTION	2
1. Purpose of the Review	2
2. Acceptability and Approval	3
3. Status of the Review	4
II. THE UNDERTAKING	5
1. Description	5
III. CONTEXT OF THE REVIEW	7
IV. SPECIFIC ERRORS AND DEFICIENCIES	8
1. Existing and Future Water Requirements	8
a) History of the Water System	8
b) Present and Future Water Demand	9
i) Population	10
ii) Industrial and Commercial	10
2. Alternatives	12
a) Raw Water Supply	12
3. Project Description	15
a) Backwash	15
b) Distribution System	16
c) Fluoride and Chlorination	18
d) Future Expansions	18
e) Retirement	18
f) Economics	19
g) Other Structures	20
4. Environmental Effects	21
5. Mitigation of Environmental Effects	21
a) Noise	21
b) Archaeological Sites	22
c) Disinfection	22
d) Construction Impacts	23
e) Tree Buffer Zone	24
f) Safety	24

Page No.

V. CONCLUSIONS

1. The EA	25
2. Water Quality and Quantity	25
3. Environmental Effects	26
4. The Undertaking	26

VI. RECOMMENDATIONS 26

Recommended Conditions of Approval	27
------------------------------------	----

OUTLINE OF THE REVIEW

Section I, Introduction, briefly describes the undertaking, the purpose of this review, and the two major decisions to be made under The Environmental Assessment Act. Following this is a brief statement of the review's recommendations on those two decisions, and the general rationale for the recommendations. The status of the review is also clarified.

Section II, The Undertaking, outlines the Ministry of the Environment's proposal in more detail in order to clarify the main components of the undertaking being considered for approval.

Section III, Context of the Review, explains that the scope and depth of the review relate directly to the nature of the proposed undertaking in the environmental setting which may be affected.

Section IV, Specific Errors and Deficiencies, forms the main body of the review. The main concerns raised by the reviewers are outlined and discussed. Conclusions as to the effect on the decisions are drawn from these discussions.

Section V, Conclusions, summarizes the main issues raised in the review and presents conclusions as to the acceptability of the EA and approval of the undertaking.

Section VI, presents Recommendations, and suggests conditions of approval.

I. INTRODUCTION

On April 28, 1978, an environmental assessment for a proposed expansion to the Regional Municipality of Niagara's water treatment plant in Welland was formally submitted to the Minister of the Environment for approval under The Environmental Assessment Act, 1975 (EA Act).

Briefly, the environmental assessment (EA) deals with a proposal by the Ministry of the Environment (MOE) to expand the Regional Municipality of Niagara-Welland Water Treatment Plant. The capacity is to increase from 15 million Imperial gallons per day (MIGD) to 22.5 MIGD (Note: To maintain consistency with the EA, this review does not use metric units except for concentrations). The expanded plant is intended to service the City of Welland and the communities of Fonthill, Fenwick, and Port Robinson.

1) Purpose of the Review

The following review was prepared to fulfill the requirements of Section 7(1)(a) of The Environmental Assessment Act which states that:

"Where an environmental assessment of an undertaking is submitted by a proponent to the Minister, the Minister:

- a) shall cause a review of the assessment to be prepared; ...".

On direction of the Minister of the Environment, the Environmental Assessment Section of the Ministry of the Environment solicited

comments from those Ministries and agencies of the Provincial Government which expressed an interest in reviewing the proposal. This review represents the combined comments of those Ministries and agencies, co-ordinated by the Environmental Assessment Section.

For purposes of this review, those Ministries which contributed comments and the Environmental Assessment Section are termed "the reviewers".

References in the review to "the Act" should be interpreted as referring to The Environmental Assessment Act, 1975, unless otherwise specified.

2) Acceptability and Approval

There are two decisions which must be made under Section 5(1) of The Environmental Assessment Act. The first concerns the acceptability of the EA itself, and the second is the determination of whether approval to proceed with the undertaking should or should not be given or given with terms or conditions. This review presents recommendations on these two decisions based on certain considerations.

The recommendation on acceptability of the environmental assessment has been made based on a consideration of the document in light of the purpose and requirements of the Act. In particular, the reviewers have arrived at their recommendation after forming the opinion that the information in the document is

considered sufficiently complete and satisfactory to enable a decision to be made with regard to approval of the undertaking.

The recommendation on whether approval to proceed with the undertaking should or should not be given, has been made based on a consideration of the undertaking itself, the justification presented for the selection of the undertaking from a number of alternatives, the severity and extent of anticipated environmental effects and the proposed mitigation measures. These conclusions were then related to the purpose of The Environmental Assessment Act which is to provide for the betterment of the people of the whole or any part of Ontario by the protection, conservation and wise management of the environment in Ontario (s.2).

It is the recommendation of this review that the environmental assessment be accepted and that approval be given to proceed with the undertaking subject to conditions set out on pages 27-29 of this review.

3) Status of the Review

It is important to clarify at this time that this review and the recommendations it contains represents only the preliminary position of the Ontario Government based on the comments of the Provincial Ministries and agencies involved in the review. It does not represent a decision and should not be construed as directing the Environmental Assessment Board in matters that may come before it. It is only after a consideration of any public submissions received by the Minister of the Environment on the

EA or the review, or after a hearing (if one is held) before the Environmental Assessment Board, that decisions on the acceptability of the environmental assessment, and on whether or not to approve this undertaking, will be made.

These decisions are made either by the Minister of the Environment, or by the Environmental Assessment Board, and may, as specified in The Environmental Assessment Act, take one of three routes:

- i) The Minister decides on acceptance of the EA, with Cabinet approval, and also decides on approval of the undertaking;
- ii) The Board makes both decisions;
- iii) The Minister makes the first decision, and the Board makes the second one.

II. THE UNDERTAKING

1. Description

The Ministry of the Environment is proposing to expand the Regional Municipality of Niagara-Welland Water Treatment Plant (City of Welland) in order to increase the capacity from 15 million imperial gallons per day (MIGD) to an ultimate capacity of 22.5 MIGD.

The present Welland water system supplies water to the City of Welland and a section of Fonthill. The expanded plant is intended to service this area as well as the remaining sections of Fonthill, Fenwick and Port Robinson.

The proposed source of raw water is the abandoned section of the Welland Canal (The Old Welland Canal).

In order to increase the capacity to meet the projected 20 year demand, the following additions and modifications to the existing water treatment plant are proposed:

1. Low lift pumping station modifications;
2. Conversion to direct filtration for Treatment Plant No. 1 (1926 addition);
3. Conversion to direct filtration for Treatment Plant No. 2 (1956 addition);
4. Installation of backwash water treatment facilities which will include a 250,000 imperial gallon holding tank designed to thicken the sludge and filter backwash and to discharge the thickened sludge to the local sanitary sewer system;
5. New alum storage tanks and transfer pumps plus the addition of hydrofluosilicic acid for the chemical feed system;
6. Construction of a new high lift pumping station west of existing Plant No. 2 over the new reservoir;
7. Construction of a new 1.25 MIG underground reservoir in addition to the existing 1.3 MIG reservoir;

8. Other new structures will include a work shop, garage, hydro transformer station, and office building housing a laboratory, control room and washrooms.

III. CONTEXT OF THE REVIEW

In conducting a review of an environmental assessment, consideration must be given to the nature of the undertaking.

The contents of an EA, as required by The Environmental Assessment Act, are flexible enough to permit varying degrees of detail, having regard for the nature of the undertaking and the possible environmental effects. This must be kept in mind when carrying out a review. The level of detail deemed acceptable in the review of one undertaking, may not be acceptable for another.

The Welland Water Treatment Plant EA is for the expansion of an existing plant to service communities for which, for the most part, the distribution system is already in place. The expansion is to take place on the existing site with no disruption to the Old Welland Canal or the Welland River required. The effects on the social and natural environment are therefore expected to be minor, short-term and site specific.

For relatively minor plant expansion such as this, the proponent is developing a class environmental assessment. It will

describe the planning procedure to be followed by the proponent when developing these types of projects in the future.

The Class EA is still in preparation and until such time as it has been submitted and approved, the proponent has chosen to do specific environmental assessments for each project.

Once the Class EA is approved, and provided the procedures set out in that approval are followed, the proponent could then proceed with such projects without having to apply for either exemptions or separate approvals.

IV. SPECIFIC ERRORS AND DEFICIENCIES

The review will follow the general format of the EA, pointing out errors and deficiencies in light of the content requirements (s.5(3)) of the Act.

This will be followed by the conclusions section and the recommendations of the reviewers regarding the nature of the approval.

1) Existing and Future Water Requirements

a) History of the Water System:

The Act requires that the EA address the reason for wanting to proceed with the undertaking. In this instance, such discussions would revolve around the supply and demand question.

The EA presents a case for wanting to service an expanded demand in the current service area (Welland and part of Fonthill). It does not however, explain why the existing supplies in the currently unserviced areas of Fonthill, Fenwick and Port Robinson are inadequate.

A discussion of the problems in these areas and the implications of not proceeding with the undertaking (no-go alternative) would have helped to clarify why this project is required.

It is understood that there is contamination of wells in the Fenwick area from septic tanks. This was documented in a 1967 study by the Welland County Health Unit and a 1975 study by the Niagara Regional Health Unit. This information should have been documented in the EA or attached as an appendix, since it establishes the urgency of a new water supply in Fenwick.

Although the problem documentation is not well presented, it is felt that a recommendation can be based on the information available and further research is not required.

b) Present and Future Water Demand:

The rationale for the undertaking is an important part of an EA. The History section and this section should set out the problems with the existing system and the projected future

water requirements. This would make it clear that an expanded water system is necessary. If this rationale is not clearly established then it places the whole EA in question.

The reviewers have several concerns related to the demand projections. These are outlined in the following sections.

- i) Population - The information provided is difficult to evaluate due to certain inconsistencies between the tables and the text. On page 2.3, the anticipated growth rate (1976 to 1986) is 1%, however the growth rate inferred by Table 1 for this period is more than double this figure.

In order to understand the trends in the service area, it would have been useful to have figures for 1961 included in Table 1.

The overall population projections however, conform roughly with those of the Ministry of Treasury, Economics and Intergovernmental Affairs and are therefore acceptable to the reviewers.

- ii) Industrial and Commercial - The demand projections for industry and commercial land are felt to be optimistic, since statistics indicate that there has been no net increase in the number of larger firm industrial jobs in

Welland for some time. Furthermore, since March of 1977 there has been a net loss of over 600 jobs in Welland.

This however may be offset in the future with the development of the new Alaskan pipeline. Foothills Canada has indicated that the Steel Company of Canada operations in Welland will likely get contracts for pipe, fittings, valves and foundry products.

There are discrepancies between the information provided in Table 6 and in the text (page 2.6 and 2.7) as it relates to the projected industrial and commercial acreages for the year 2001. As well, the EA does not project a demand for commercial general acreage (page 2.7). These inconsistencies tend to place the accuracy of the information in question.

A minor error of the report is that the Existing Land Use Zoning Map on page 5.6 should be labelled Drawing No. 10.

The emphasis in the E.A. has been on satisfying the projected demand. As an alternative to the undertaking, the EA should have addressed the possibility of modifying the future demands for water, thereby reducing the size of the plant that would be required. Initiating public education programs on water conservation, instituting financial incentives for off peak use for industrial and commercial consumers and encouraging the

use of water saving devices could result in reductions of both total and peak flow demands.

Although the foregoing points are of concern to the reviewers, it is felt that the demand projections are sufficient on which to base a recommendation.

2) Alternatives

The Environmental Assessment Act requires a discussion of alternatives to the undertaking and alternative methods of carrying out the undertaking. The proponent has confined his discussion of alternatives primarily to the raw water supply. There has been no discussion of alternative modes of treatment or ratios of production to storage.

It is understood that the plant must meet the maximum daily demand through production, with storage satisfying the peak requirements. The EA should have documented why the proposed design is the best alternative for satisfying these requirements. Although this is a deficiency in the report, the reviewers feel that the information is adequate enough on which to base a decision.

a) Raw Water Supply:

The EA states a preference for the Old Welland Canal as a raw water source, due to its superior quality. It does not

however make it clear where this water comes from or what the long term quality and quantity projections are.

Presently, the Old Welland Canal is closed off at the southern end. The water must therefore flow north in the ship canal to Port Robinson at which point it flows south in the Old Welland Canal to the water treatment plant. At the plant, the Welland River flows under the Old Welland Canal.

Approximately 500 cfs (cubic feet per second) of water flows south to the plant. At this point, 250 cfs flows through the water treatment plant and the rest flows into the Welland River through holes in the bottom of the canal.

There are several storm sewers and ditches currently carrying urban drainage to the Old Welland Canal. The E.A. states (page 4.8) that the Old Welland Canal is like a "large settling basin".

In light of the possibility of receiving contaminants both from the ship canal and urban runoff, and the settling basin effect, there is concern for the long term viability of this supply.

The proponent should acquire assurances from the St. Lawrence Seaway Authority that adequate flows to the treatment plant will be maintained. As well, there should be plans for ensuring long term water quality. This could be accomp-

lished by negotiating an agreement with the Regional Municipality of Niagara not to expand and possibly to reduce the amount of urban drainage being discharged to the canal upstream of the plant or to improve storm water quality otherwise. There should also be a contingency plan in case the water in the ship canal becomes contaminated.

The EA does not address organic and inorganic chemicals, including heavy metals, which are significant in drinking water when determining the raw water source. This is not an immediate concern with respect to this undertaking but should be addressed in future evaluations of this nature.

In discussing the raw water alternative the EA carries discussion of the ground water in the Welland area to an extreme. It would have been sufficient to carry the discussion to a point where the alternative clearly becomes unacceptable.

The EA did not however address the quality and quantity of the ground water in the Fonthill and Fenwick areas. Such a discussion would have helped to clarify the need to service these areas.

Table No. 12 on page 4.9 utilizes 1974 water quality data to evaluate the raw water alternatives. There exists more up to date data that should have been used. This data however substantiates the conclusions arrived at in the EA.

A minor error in the EA dealing with water quality exists on page 3.5. It is stated that there are "high concentrations of hydrogen sulphate (SO_4) in solution" in the ground water. This should read "hydrogen sulphide".

The background geological information provided on page 3.2 is incorrect. The actual formations in descending order are the Salina Formation, the Guelph Formation and the Lockport Formation.

3) Project Description

The EA should make it clear to the reviewers what the project involves. This includes the construction, operation and maintenance as well as future expansion and retirement of the plant.

The following errors and deficiencies in the information provided have been identified and are addressed individually.

a) Backwash

On page 6.8 of the EA the proponent indicated that backwash waste treatment facilities were under review by the Ontario Ministry of the Environment. An addendum to the EA entitled, "Addendum No. 1 to the Environmental Assessment Report - Ontario Ministry of the Environment - Project No. 5-0250-35 - Regional Municipality of Niagara - Welland

W.T.P. Expansion - 15 MIGD to 24 MIGD" was submitted on June 12, 1978. It dealt with the backwash treatment question. This addendum was circulated to the reviewers for comments.

The addendum lacks any detailed cost information. Statements such as "less costly" and "relatively very expensive and energy demanding" are of little value when trading off alternatives.

There should also be some substantiating information provided on which to evaluate the treatability of the sludge at the sewage treatment plant (e.g., phosphorous levels), and the suitability of the discharge to the Welland River.

There are two errors in the addendum; page 2-BOD stands for Biochemical (not Bacteriological) Oxygen Demand, and page 3-alum is added in a sewage plant for phosphorous (not nitrogen) removal.

Although the addendum is lacking in cost information, the proposed treatment procedure for the backwash is acceptable and should be implemented as a condition of approval (Condition 1).

b) Distribution System

The EA does not address the existing nor the proposed water distribution system required to carry the water from the plant to the consumers.

The purpose of the undertaking is to provide potable water to the consumers in the service area. The distribution system is clearly required to achieve that purpose and is a necessary consequence of the undertaking, so therefore should have been addressed in the EA.

The trunk watermains to Fonthill and Fenwick were constructed before the EA was submitted. Taking this into consideration, the reviewers feel that the omission of details regarding the distribution system does not affect the ability to make a recommendation regarding approval of the undertaking.

The proponent is cautioned that the planning of associated distribution systems should form part of future environmental assessments of this nature. As well, distribution systems that are dependent on the proposed plant should not be constructed until an approval has been obtained under the Act.

The EA should also have clarified the Provincial and Municipal roles with respect to the supply of water in the Regional Municipality of Niagara. The Ministry of the Environment designs and builds the water treatment plants, whereas the Regional Municipality of Niagara operates the plants and designs and builds the water distribution systems.

c) Fluoride and Chlorination

On page 6.9 of the EA, under the heading "Fluoride", reference is made to a "combined chlorine residual and fluoride concentration of 1.0 milligram per litre (mg/l) in the distribution system". This is an error in the report. It should read, "Fluorides are added to this treated water to maintain a total fluoride concentration of 1.0 mg/l in the distribution system".

The section on "Chlorination" should have discussed the details of the chlorine residual to be maintained in the water. It is understood that the existing facilities are sufficient to maintain a .5 mg/l chlorine residual in the water from the expanded plant. This is accomplished through the use of chlorine gas.

d) Future Expansions

The EA has not addressed the potential for future expansions to the plant. An approval for the undertaking should not constitute an approval for future expansion (Condition 1).

e) Retirement

The retirement of this plant has not been discussed in the EA. Since the design period is twenty years, it may not be possible to discuss retirement with any degree of certainty.

If and when this plant is abandoned, a new facility will likely be required and retirement of the Welland Water Treatment Plant should be a topic of discussion at that time.

The approval of this undertaking should not include the ultimate retirement of the plant (Condition 1).

f) Economics

The Act requires a discussion of the economics of the undertaking and its alternatives. Providing actual cost estimates would help to better understand the trade-offs being made. It is not sufficient however, to just state that ground water studies "would be extremely complex and costly".

There should have been a breakdown of the costs of constructing, operating and maintaining the proposed plant as compared with the estimated costs of the alternatives. As well, there should have been a discussion of the financing arrangements with the municipality.

It is understood that the cost of the plant expansion is estimated at \$6 million. This will be financed by the Ministry of the Environment. The money (less a 15% grant) will be paid back to the Province by the Regional Municipality of Niagara over a 40-year period. The Region of Niagara in turn will establish an appropriate uniform

rate structure for the people being serviced by the entire region (not just this plant).

The Regional Municipality of Niagara and the Ministry of the Environment agree upon the design, cost and financing arrangements before proceeding with the project.

Although the absence of any cost information is a major deficiency in the report, the reviewers feel that the negotiations with the Regional Municipality of Niagara will ensure that a cost efficient alternative is selected.

In future environmental assessments, the proponent is advised to provide sufficient cost and financing information regarding the recommended undertaking, and estimated cost information on the alternatives considered.

g) Other Structures

On page 6.10 the EA refers to the provision of a workshop, garage, office building (with a laboratory and control rooms), and a new hydro transformer station. There is no mention of why these facilities are being provided.

It is understood by the reviewers, that the Regional Municipality will be using this plant as a base from which to operate several other plants. The office is required to serve an expanded staff and the warehouse and garage are needed to store and repair equipment.

It is also understood that the new transformer station is required to replace the existing transformer station which is not of sufficient capacity to service the expanded plant.

4) Environmental Effects

The EA does not clearly lay out the environmental effects of the undertaking and the various alternatives. These could address such matters as the pollution problem in Fenwick and the effects of construction and operation of the plant on the local people (e.g., noise, traffic, dust, etc.).

Many of the effects are inferred by the mitigation procedures which have been recommended. In this case it is evident that the effects on the social and natural environment will be minor and site specific. Therefore the reviewers feel that this deficiency in the report does not warrant rejection of the E.A.

In future, however, the proponent should provide sufficient information on the potential environmental effects of the undertaking and alternatives to fully evaluate the proposal.

5) Mitigation of Adverse Environmental Impacts

a) Noise

The EA does not deal with potential impacts due to noise from the construction and operation of the new plant. The

reviewers feel that the concerns about increased noise levels can be adequately handled as a condition of approval for the undertaking (Condition No. 2).

b) Archaeological Sites

The likelihood of finding anything of archaeological significance is small, however, the contractor and the inspectors should be aware of the proper procedures for dealing with such a find.

If during the construction of the new facilities, bones are unearthed, the proponent must halt excavation immediately and notify the local Coroner's office and Mr. Bill Fox, Regional Archaeologist, Historical Planning and Research Branch, Ministry of Culture and Recreation, 55 Centre St., London, Ontario (phone (519) 433-8401).

Work cannot be resumed until permission is granted by the Ministry of Culture and Recreation. These are requirements of The Ontario Heritage Act and The Cemeteries Act (Condition No. 3).

c) Disinfection

An important environmental effect that was not addressed in the EA is the disinfection process. Prior to placing portions of a water treatment plant that will store or

transmit water for human consumption, into service, they must be disinfected. This is usually accomplished by filling the facility with highly chlorinated water (50 ppm) and holding it there for 24 hours. At the end of this period the water is generally discharged. If discharged to a water body containing fish these fish may be killed. Although the Welland River and the two canals do not contain a significant fishery, there are fish and a minor sport fishery present. The highly chlorinated water must therefore not be discharged to these watercourses (Condition No. 4).

It is recommended that the water be placed into the settling pond on site and be allowed to stand until the chlorine has dissipated. The clean water can then be discharged to the Welland River.

d) Construction Impacts

In addition to the items contained in Section 7 of the EA, the following sections from the Ministry of the Environment's publication entitled, "Environmental Considerations for the Planning and Construction of Provincial Sewer and Water Projects" should be applied:

- A - Equipment Fuelling, Maintenance and Storage.
- B - Noise Control.
- E - Dust and Particulate Control.
- F - Clearing Rights-of-Way.

G - Site Drainage and Erosion Control.

K - Tree Maintenance.

L - Site Restoration.

These mitigation measures should be included in the construction specifications to ensure that they can be enforced by the on-site inspector (Condition No. 5).

e) Tree Buffer Zone

The proposal allows for the removal of several trees on the site. The reviewers feels that these trees should be replaced on a one-for-one basis and planted in such a manner as to screen the plant from adjacent properties and transportation routes. In order to provide a visual barrier in the winter the proponent should consider planting conifers.

f) Safety

The Ministry of Labour requirements under The Construction Safety Act, 1973, The Industrial Safety Act and The Employees' Health and Safety Act, 1976, must be complied with.

These are already requirements by law and need not be made a condition of approval.

V. CONCLUSIONS

The previous discussion has identified and suggested resolutions for the deficiencies and errors in the EA.

This section will address the major issues and present conclusions as to the acceptability of the environmental assessment and the approval of the undertaking.

1) The EA

The EA has many deficiencies in the information provided. It is felt however that these deficiencies are not significant enough to make the EA unacceptable as a basis for deciding on project approval.

It is concluded therefore that the EA can be accepted provided the conditions recommended in this review are imposed on the approval.

The proponent should be cautioned, however, that in a different context, or with a more significant undertaking, deficiencies of the type identified in this review might well render an EA unacceptable.

2) Water Quality and Quantity

There is some concern regarding the long term viability of the raw water supply. The proponent should take

measures to ensure adequate flow and quality in the Old Welland Canal during the life of the plant.

3) Environmental Effects

The adverse environmental effects are expected to be minor, short-term and site specific. It is felt that the mitigation measures outlined in the EA and expanded upon in the recommended conditions for approval satisfactorily provide for the protection of the environment.

4) The Undertaking

The EA does not address future expansions to the water treatment plant or the ultimate retirement of the facilities.

It is concluded therefore that the approval should be granted, but limited to the construction, operation and maintenance of the expanded plant as proposed in this EA. This will be accomplished through the imposition of Condition No. 1 on the approval.

VI. RECOMMENDATIONS

Having regard to the purpose of The Environmental Assessment Act, and the content requirements of Section 5(3), the reviewers are of the opinion that the information in the assessment is

sufficient and satisfactory to enable a decision to be made as to approval of the undertaking. Therefore, it is recommended that the environmental assessment be accepted (s.9).

Having regard to the purpose of the Act, the nature of the undertaking and the environmental assessment, it is recommended that the undertaking be given approval to proceed subject to the following conditions (s.14),

Recommended Conditions of Approval

- 1) The undertaking is limited to the construction, operation and maintenance of a 22.5 MIGD water treatment plant by expanding and modifying the existing Welland Water Treatment Plant in the following manner:
 - i) modify the low-lift pumping station,
 - ii) convert Treatment Plants No. 1 and 2 to direct filtration;
 - iii) install backwash water treatment facilities consisting of a 250,000 Imperial gallon holding tank designed to thicken the sludge and filter backwash and to discharge the thickened sludge to the local sanitary sewer system;
 - iv) add new alum storage tanks and transfer pumps plus hydrofluosilicic acid for the chemical feed system;
 - v) construct a new high-lift pumping station;
 - vi) construct a new 1.25 MIG underground reservoir;

- vii) add a new workshop, garage, hydro transformer station and office building, housing a laboratory, control room and washrooms; and,
 - viii) does not include any future modifications to the plant which would increase its capacity nor the ultimate retirement of the facilities.
-
- 2) The plant must be designed in such a manner as not to result in an increase in ambient noise levels in the adjacent residential areas during operation.
 - 3) The proponent must ensure that the contractor and his workers are made familiar with the requirements of The Ontario Heritage Act and The Cemeteries Act.
 - 4) Before the water from the disinfection of the facilities, which is carried out prior to putting them into operation, is discharged to a watercourse, the proponent must institute procedures whereby the Total Residual Chlorine is reduced to at least 0.2 mg/l, and that the Free Chlorine level is reduced to at least 0.1 mg/l as measured using an Amperometric Titrator or the D.P.D. Comparator Method.
 - 5) The mitigation measures outlined in Section 7 of the E.A. and Sections A, D, E, F, G, K and L of the MOE publication, "Environmental Considerations for the Planning and Construction of Provincial Sewer and Water Projects" must be contained in the construction specifications and enforced by the proponent's on-site inspectors.

- 6) The proponent shall be responsible for ensuring that tender documents are in accordance with the environmental assessment, the approval and the associated conditions. Three copies of the final plans and specifications shall, before tenders are advertised, or otherwise let, be sent to the Director of the Environmental Approvals Branch of the Ministry of the Environment to be filed in the Public Record for the undertaking.
- 7) The proponent shall be responsible for ensuring, by site inspection and such other methods as may be required, that the construction of the undertaking is carried out in accordance with mitigation measures referred to in Conditions 3, 4 and 5.

ONTARIO, Publication



96936000008121

TERMINAL

CR

DATE _____

ISSUED TO

- CAT. No. 23-115

PRINTED IN U. S. A.